

<b>Plan Title:</b>	<b>Commerce Administrative Management System</b>
<b>Plan Number:</b>	<b>CB-AS-95-02-E</b>
<b>Plan ID:</b>	<b>IT</b>

## **PART I - INFORMATION TECHNOLOGY ARCHITECTURE PLAN**

### **1. Information Requirements**

#### **A. Introduction**

Commerce Administrative Management Systems (CAMS) Implementation Office is responsible for the deployment of all component systems of CAMS at the Bureau of the Census, the development of the Bureau strategy for the phased implementation, the assessment and update of policies, procedures, organization, and staff; the integration of CAMS components and the audit, review, identification, and correction of financial system deficiencies; the process re-engineering to streamline business processes connected with and supported by CAMS within the Bureau.

Implementation of CAMS requires the development of the Bureau operational and technology architecture including telecommunications, selection and procurement of hardware necessary to support the system.

Installation of CAMS includes the establishment of Bureau operational procedures relating to CAMS, data conversion from existing systems, the establishment and management of financial database sites, and the training associated with the deployment of the system. Coordination is required with the Office of Financial Management Implementation Center and the other DOC bureaus since CAMS is a departmentwide system.

CAMS consists of the following categories of systems:

1. Core Financial System
  - a. General Ledger
  - b. Accounts Receivable
  - c. Accounts Payable
  - d. Budget Execution
  - e. Cost Accounting
  - f. Financial Reporting

## **VI-2 U. S. Bureau of the Census 1997 Information Technology Plan**

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2. Department Functional Systems
  - a. Procurement
  - b. Travel
  - c. Property
  - d. Payroll/Time and Attendance
3. Bureau-Specific Feeder Systems
  - a. Grants/Loans
  - b. Others

CAMS is envisioned to support a paperless, seamless operation in which financial data are captured as a byproduct of program and administrative tasks. Financial management permeates all of the Bureau's programs and operations and is performed within these by managers who are responsible, accountable financial managers. Hence these managers must have ready access to all the data and information needed to satisfy these requirements. CAMS must ensure the integrity, timeliness, and completeness of the data and information.

One of the objectives of CAMS is single-entry, source capture of data that will eliminate duplicate data entry and related accounting reconciliations. Paperless processing, using electronic forms and electronic approval, produces the form while concurrently recording the appropriate accounting transactions, i.e., validating the availability of funding and committing/reserving funds for the expenditures. Up-to-date official financial data will be available for query based on user security profiles.

## **2. Planned Processing and Telecommunications Architecture**

The current Bureau of the Census Financial System (BOCFS) is largely processed on the Unisys C-Machine. Figure 1 depicts the data flow in the system. Data entry operations are on the Unisys using DPS, the DEC AIMS using the INGRES RDBMS or on microcomputers using dBase IV. As shown in Figure 2, feeder systems such as the POSTAL Estimate, Property Inventory, Headquarters PROP, Field Automated Payroll System, Budget/MIS, Stores Inventory, and Unemployment Compensation are also processed on the UNISYS. These systems use either System 2000 database management system or COBOL. Data are also derived from the Budget MIS, Procurement MIS, and the Travel MIS on the DEC/AIMS. ACSD feeds data to the system for forms services and printing costs. Tapes are received from the Department of Commerce Financial Services Division and from the National Finance Center which are input to the BOCFS.

The current system is batch processed and provides no on-line access to accounting data. The system does not provide for processing two accounting periods concurrently. Since the system was designed in the early 1960s and has not been redesigned, tables are hard-coded in the programs and the minimal advances in technology are used in the system.

Attachment 1, Census Bureau Core Financial System (CFS) Benefit/Cost Analysis describes the alternatives considered for the implementation of the CFS and the recommended, preferred alternative. The CAMS Implementation Office completed an investigative test (Attachment 2 is the Executive Summary of the results of this test.) of the CFS on a Silicon Graphics Inc. (SGI) platform using the IRIX operating system and on the DEC-8400 using Digital UNIX in December 1995. Based on the results of the test the DEC-8400 is the chosen platform for the Core Financial System.

The CFS is a standard financial management software acquired by the Department of Commerce to be operated on Bureau's platforms. Among the mandatory requirements are:

- Be independently operable by major bureaus on their platforms.
- Be operable on DEC hardware/operating system software.
- Be operable on IBM-compatible hardware/operating system software.
- The exact same version of the contractor's proposed software package shall run on all sizes of computer platforms.
- Be operable on each system confirming to the IEEE 1003.x "POSIX" family of standards.

The CFS selected by the Department of Commerce met all the above requirements thus ensuring interoperability of the software and enabling the Census Bureau to migrate to the platform of choice.

Program benefits of the proposed architecture include:

- Financial data are administered by the program managers and data are processed and stored at their most utilized level.
- Financial data are captured as a by-product of program and administrative operations, whenever feasible with the objective of single-entry, source data capture.
- Electronic processing will eliminate or reduce the cumbersome, costly, and complex paper processes.
- Electronic creation and approval of electronic forms with validation of funds availability will enable program managers to immediately know the impact of intended expenditures against their budgets.
- Up-to-date official financial data are available for on-line query based on user security profiles.
- An increasingly open systems environment is achieved that provides for inter-operability of hardware and software, as well as portability of data and applications across diverse computing environments.
- Interconnectivity of systems will evolve to seamless processing where feeder systems pass data to and retrieve data from the CFS in a way that is transparent to the user.

### **3. Security**

#### **VI-4 U. S. Bureau of the Census 1997 Information Technology Plan**

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The CFS has the following security requirements:

- Access security at the screen, record, and field level for all information in the database
- Only each bureau's System Administrator shall have the ability to modify bureau-related system tables
- Users of the proposed shall be able to delegate their authorities subject only to security and access controls
- The system shall restrict access down to the data element level for each user-ID. All unauthorized login attempts and all unauthorized access attempts shall be written to a log file with date and time, terminal ID, user-ID, table(s), and function(s) ID recorded
- The system shall generate and maintain audit trails recording all changes and all accesses to the database
- System security facilities shall provide the Bureau System Administrators full control over access by bureau users, including the ability to specify the type of access on the basis of requester's ID, password, terminal used, and function performed

<b>Plan Title:</b>	<b>Commerce Administrative Management System</b>
<b>Plan Number:</b>	<b>CB-AS-95-02-E</b>
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## **PART II - ANNUAL PLAN**

### **1. Architecture Status**

The technology architecture alternatives described are valid until the implementation of the CFS. The plan as shown in the Implementation Schedule shows that initial deployment of CFS will begin in October 1996 at which time the base platform will be required. As CFS is deployed throughout the Bureau, additional resources may be required. These requirements will become clearer as the planned operational profile is completed.

The CFS is a Commercial Off-the-Shelf software (COTS) developed by Rel-Tek and was acquired by the Department of Commerce from Andersen Consulting, LLP. Required Support Software is offered as part of the contract. These are additional software products that vendors are offering for the operation, maintenance, or management of the CFS package. The vendors include A&T Systems, Inc., Digital Equipment Corp., Elbelco, Inc., International Business Machines (IBM), Intersolv, Mergent International, Novell, Oracle Corp., Powersoft Corp., Rel-Tek Systems and Design, Inc., and Symantec.

Technical services such as analysis and programming of interfaces, data conversion, enhancements, modifications, system tuning and systems integration is available under the contract for the CFS.

### **2. IT Objectives**

In FY 1996, the CAMS Implementation Office has the following IT plans:

- Perform an acceptance test of the CFS
- Install and test the Oracle RDBMS and CFS on the DEC Alpha-8400 using the Digital UNIX operating system
- Deploy the CFS in the offices of the Assistant Comptroller Finance, Assistant Comptroller Budget and Procurement Office
- Test the telecommunications capabilities of the bureau in support of the CFS throughout all headquarters locations, the Regional Offices, and Data Preparation Division.

## **VI-6 U. S. Bureau of the Census 1997 Information Technology Plan**

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The technology architecture for the deployment of the CFS was based on the results of the investigative benchmark tests performed on the Silicon Graphics Inc. and the Digital Equipment Corp. platforms.

### **3. Status**

#### **A. Accomplishments/Progress**

The CAMS Implementation Office (CAMSIO) was established in June 1995. Refer to the Implementation Schedule for the accomplishments to date by various organizations throughout the Bureau. With the formation of the CAMSIO, the activities towards the bureau-wide deployment has been centralized and directed. FY 1994 and the first quarter of FY 1995 resources were largely expended in the Bureau's participation in the procurement of the CFS. Personnel from ACFIN and OMSD took part in the market research and the development of the Request for Information and Request of Proposal for the CFS. This was followed by the functional and technical evaluation of the proposals including the life cycle transaction test and the performance validation tests. The contract for the CFS was awarded in December 1994.

A survey of the various automated feeder systems was completed by contractors in February 1995. This study will be the basis for determining which of the feeder systems will be subsumed by the CFS and which ones will be modified or redesigned and continue to be a feeder to the CFS. Business process engineering efforts have been completed for the Accounting Classification, Budget Execution, Accounts Payable, Accounts Receivable, General Ledger modules with reports available in draft. Work continues on the development of the planned operational profile to determine the sources of the input documents, their volumes and frequency of entry into the accounting system.

The deployment strategies for the CFS implementation have been developed. The baseline strategy will take the accounting batches from the current system and feed them to the CFS general ledger. For the target strategy data from the automated feeder systems will be extracted by interface programs and entered into the appropriate CFS module.

Performance benchmarks for the CFS were completed on two platforms, viz. the Silicon Graphics Inc. (SGI) Challenge XL and the Digital Equipment Corp. (DEC) Alpha-8400. The Executive Summary showing the results of these benchmark tests is found in Attachment 2. The CFS software is being installed on a DEC-2100 computer which will be used as the development platform. When tests are completed on the DEC-2100 computer, the software will then be installed on the DEC-8400 which will be the production platform.

CAMSIO staff participated in the analysis of software for the Order Entry & Inventory System to be used by ACSD for their sales orders, in the analysis of the requirements and software for the Decennial Payroll (PAMS/ADAMS) and in the documentation of the requirements for the DOC-wide Time and Attendance module. The Time and Attendance system and the Order Entry and Inventory

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**Commerce Administrative Management Systems CB-AS-95-02-E VI-7**

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System will be integrated with CAMS and will be installed on the DEC-8400 computer platform and the Decennial Payroll System will be a feeder system to the CFS for labor costs.

Reviews of over one hundred feeder systems both manual and automated are continuing. These reviews are in response to the Inspector General's requirement that the feeder systems should be free of vulnerabilities and should pass financial integrity standards.

There are no plans for converting the current BOCFS off the UNISYS which is available until December 1997. The target deployment strategy will take the feeder systems from the UNISYS and DEC-AIMS systems and feed the CFS Budget Execution, Accounts Payable, Accounts Receivable, General Ledger modules. The target deployment strategy is to take the transaction batches from the current BOCFS and feed these transactions to the CFS General Ledger. In FY 1997 and FY 1998 when the other CAMS modules become available, i.e., Procurement, Travel, Personal Property, Bank Card, Time and Attendance, they will be implemented and deployed through the Bureau eliminating the need for the feeder systems from the current system. Once the CFS is fully implemented, the processing of the Expense/Accounting system on the UNISYS will be terminated. Full deployment of CAMS entails making the system available to users in all administrative offices, to program managers and executive staff throughout the Bureau. This full deployment will require additional upgrades to the computer platform in FY 1997. All components of CAMS will be installed on the DEC-8400 thus necessitating further upgrades to the platform in FY 1998.

## **B. Current Plans**

Near term plans are as outlined in the IT Objectives above and as shown in the implementation schedule below.

### **4. Implementation Schedule**

Project: CAMS Implementation		
Milestone	Start	Complete
Organize implementation team	02/95	08/95
Identify and orient key bureau personnel	01/92	08/95
Identify and organize financial deficiencies and monitor project activities to ensure that all are corrected	06/94	10/96
Identify, specify, acquire and coordinate needed contractor support	06/94	10/96
Develop CAMS user/management/staff communication awareness strategy and plan	05/95	10/95

**VI-8 U. S. Bureau of the Census 1997 Information Technology Plan**

Project: CAMS Implementation		
Milestone	Start	Complete
Incorporate Bureau mixed (feeder) systems	06/94	10/97
Develop Bureau CAMS operational architecture	04/95	04/96
Develop technology architecture	03/95	09/95
Develop telecommunications plan	03/95	06/96
Conduct benefit/cost study to determine optimum technology to support CFS	08/94	07/95
Acquire missing computer and telecommunication resources needed to support CAMS operations	10/95	10/96
Install system components	01/96	10/96
Validate installed computer capacity/technology	06/96	10/96
Install final accepted version of modified software on Census Bureau computer platforms	06/96	10/96
Prepare CAMS system operations plan for bureau processing and database site	03/96	10/96
Establish team support for implementation effort	10/95	10/96
Develop deployment strategy for CAMS component systems	10/95	04/96
Assess and update policies, procedures, organization structure, and staff	06/96	10/96
Convert data from existing systems to CFS	03/96	10/96
Plan and conduct training	03/96	12/96
Conduct Beta test at the Implementation Center	03/96	06/96
Load CFS system with live bureau data	09/96	10/96
Implement CFS Bureau-wide	09/96	10/97
Implement Procurement System and Integrate with CFS	01/97	10/97
Implement Travel System and Integrate with CFS	03/97	10/97



**Commerce Administrative Management Systems CB-AS-95-02-E VI-9**

Project: CAMS Implementation		
Milestone	Start	Complete
Implement BankCard System and Integrate with CFS	06/97	10/97
Implement Time and Attendance Module and Integrate with CFS	10/97	01/98
Implement Order Entry & Inventory and Integrate with CFS	10/96	01/97
Integrate Decennial Payroll (PAMS/ADAMS) with CFS	01/98	04/98

## 5. Acquisitions

Type of Equipment	Acquired FY 1995	Planned FY 1996	Planned FY 1997	Planned FY 1998
Personal Computers	26	107	200	100
Laptops/Notebooks	0	10	0	0
Laser Printers, B/W	4	6	12	6
Color Printers	1	1	0	0
Support Contracts (new/renewed)	4 (new)	4 (research)	0	0
DEC Alpha 8400	0	1	0	0
Upgrade additional memory & disks			.5	.5

